

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A communication system comprising:  
~~a plurality of credit card sized wireless long range communications devices, each of the~~  
~~long range communication devices comprising:~~  
a single high powered forward channel transmitter base station; and  
at least one wireless communications device having dimensions similar to the length,  
width, and thickness of a credit card, the at least one device having components embedded  
within, including:

a receiver;  
an ~~embedded~~ antenna;  
a man machine interface;  
a processor; and  
a power supply;

~~wherein all of the credit card sized wireless long range communications devices~~  
~~communicate with a single high powered forward channel transmitter station~~

wherein the at least one wireless communications device communicates with the base  
station.

2. (Original) The communication system of Claim 1, wherein the base station  
comprises a high temperature superconductivity receiver.

3. (Cancelled)

4. (Currently Amended) The communication system of Claim 1, ~~wherein the credit~~  
~~card sized wireless long range communications device~~ the at least one wireless communications  
device further comprising a transmitter.

5. (Previously Presented) The communication system of Claim 1, wherein the  
receiver comprises a frequency shift keying receiver.

- 395  
CL
6. (Previously Presented) The communication system of Claim 1, wherein the receiver comprises a direct sequence spread spectrum modulator.
7. (Original) The communication system of Claim 6, wherein the direct sequence spread spectrum modulator comprises differential phase shift keying.
8. (Previously Presented) The communication system of Claim 1, wherein the man machine interface comprises a display.
9. (Original) The communication system of Claim 8, wherein the display is a thin polymer emissive display.
10. (Original) The communication system of Claim 8, wherein the display is capable of displaying graphical and textual information.
11. (Original) The communication system of Claim 8, wherein the man machine interface further comprises at least one pushbutton.
12. (Previously Presented) The communication system of Claim 1, wherein the power supply comprises a primary battery.
13. (Original) The communication system of Claim 12, wherein the primary battery is a lithium non-rechargeable battery.
14. (Previously Presented) The communication system of Claim 1, wherein the power supply comprises a secondary battery.
15. (Original) The communication system of Claim 14, wherein the secondary battery is a lithium rechargeable battery.
16. (Original) The communication system of Claim 15, wherein the power supply further comprises:
- a) a constant current source charger; and
  - b) a low dropout analog regulator.
17. (Previously Presented) The communication system of Claim 1, wherein the antenna is a monopole antenna.
- 32

18. (Previously Presented) The communication system of Claim 1, wherein the antenna is a dipole antenna.

19. (Previously Presented) The communication system of Claim 1, wherein the antenna is a patch antenna.

20. (Previously Presented) The communication system of Claim 1, wherein the system is a voice response architecture and further comprises:

- a) a microphone; and
- b) an integrated broadband processor.

21. (Currently Amended) The communication system of Claim 1, wherein the ~~credit card sized wireless long range communication device(s)~~ are at least one wireless communications device is structurally flexible.

22. (Currently Amended) The communication system of Claim 1, wherein the ~~credit card sized wireless long range communication device(s)~~ can communicate within at least one wireless communications device and the base station can communicate within in a range of about 30 kilometers.

23. (Previously Presented) The communication system of Claim 1, wherein the single high powered forward channel transmitter base station is located in an aircraft.

24. (Currently Amended) The communication system of Claim 1, wherein the at least one wireless communications device receives its location from a Global Positioning System and uploads the location to the base station.

25. (Currently Amended) The communication system of Claim 1, wherein ~~all of the credit card sized wireless long range communication devices communicate~~ the at least one wireless communications device communicates with the single high powered forward channel transmitter base station using an interrogation protocol.

26. (Currently Amended) The communication system of claim 1, wherein ~~the credit card sized wireless communications system~~ the at least one wireless communications device has a thickness of about .79mm

SC 1  
27. (Currently Amended) The communication system of Claim 1, wherein ~~the credit card sized wireless communications system~~ the at least one wireless communication device has a length of about 9.6 [[m]] cm and width of about 6.4 [[m]] cm.

28. (New) The communications system of Claim 23, wherein the aircraft is a remote controlled drone flying within 30 miles of the at least one wireless communications device.

29. (New) A communications device comprising:  
a flexible smart card having a length, width, and thickness similar to the dimensions of a credit card, said smart card having components embedded within including a receiver, an antenna, a man machine interface, a processor, and a power supply, wherein said device communicates with a base station.

32  
30. (New) The device of Claim 29, further comprising a transmitter embedded within said smart card.

31. (New) The device of Claim 29, said receiver utilizing frequency shift keying (FSK).

32. (New) The device of Claim 30, said transmitter utilizing a direct sequence spread spectrum (DSSS) differential phase shift keying (DPSK) modulator.

33. (New) The device of Claim 29, said man machine interface comprising a display capable of displaying graphical and textual information.

34. (New) The device of Claim 33, said display comprising a thin polymer emissive display.

35. (New) The device of Claim 29, said man machine interface comprising at least one pushbutton.

36. (New) The device of Claim 29, said power supply comprising a primary battery.

37. (New) The device of Claim 36, said primary battery comprising a lithium non-rechargeable battery.

38. (New) The device of Claim 36, said power supply further comprising a secondary battery.

39. (New) The device of Claim 38, said secondary battery comprising a lithium rechargeable battery.

40. (New) The device of Claim 29, said power supply further comprising a constant current source charger and low dropout analog regulator.

41. (New) The device of Claim 29, said device having a length of about 9.6 cm, a width of about 6.4 cm, and a thickness of about .79 cm.

42. (New) The device of Claim 29, said antenna comprising a monopole antenna embedded on a thin flexible sheet having a length of about 9.6 cm and width of about 6.4 cm, said sheet hinged to an edge of said smart card such that said monopole antenna may be deployed by unfolding said sheet from said smart card.

43. (New) The device of Claim 29, said antenna comprising a center fed dipole antenna having a first L-shaped portion and second L-shaped portion, each portion having a long and short leg, said first L-shaped portion embedded on a thin flexible sheet having a length of about 9.6 cm and width of about 6.4 cm, said sheet hinged to an edge of said smart card such that said first L-shaped portion may be deployed by unfolding said sheet from said smart card, said second L-shaped portion embedded within said smart card, said short legs of said L-shaped portions configured in a parallel manner about hinged edge of said smart card and said sheet.

44. (New) The device of Claim 29, said antenna comprising a patch antenna affixed to at least one of a frontside and backside of said smart card.

45. (New) The device of Claim 29, said device further comprising a voice response feature comprising a MEMS microphone and integrated broadband processor.

46. (New) The device of Claim 29, wherein said device receives its location from a Global Positioning System and uploads the location to a base station.

47. (New) A credit card sized wireless communications device comprising:  
a smart card produced from a flexible die having a thickness of about .79 mm., a length of about 9.6 cm, and width of about 6.4 cm;

549  
CL

a processor integrated within said smart card which utilizes a forward and reverse channel, wherein said processor processes forward channel information for display and generation of reverse channel information, wherein the forward channel utilizes simple repetition to minimize power consumption and high forward channel carrier interference, and wherein the reverse channel utilizes forward error correcting code;

B2

a transceiver mounted within said smart card comprising,

a receiver embedded in an application specific integrated circuit (ASIC) device which utilizes single conversion frequency shift keying (FSK) for receiving transmitted information, and

a transmitter which utilizes direct sequence spread spectrum (DSSS) differential phase shift keying (DPSK) modulation for rejecting interference and enhancing reverse channel link range;

a man machine interface integrated into a front side of said smart card including,

a one-quarter VGA size dot matrix thin polymer emissive display capable of displaying a combination of text and graphics, and

at least one push button to perform functions;

a contact pad integrated on an exterior side of said smart card for communicating to an integrated processor of a separate base station via a bi-directional serial bit communications link, and for providing power and an electrical ground from an outside source;

a power supply attached within said smart card composed of a high energy density battery having a planar shape, a constant current source charger, and a low drop out analog regulator; and

an antenna embedded into said smart card;

wherein said at least one communication device communicates, via a reservation "Slotted Aloha" interrogation protocol, with a high-powered forward channel transmitter base station having a high temperature superconductivity receiver.

48. (New) The communications device according to Claim 47, said battery comprising at least one of a single lithium polymer secondary chemistry rechargeable battery, a primary non-rechargeable thin Li battery, and a secondary rechargeable thin Li polymer battery.

49. (New) The communications device according to Claim 47, further comprising a voice response feature comprising a MEMS microphone for transmitting voice information, wherein voice traffic is permitted on the reverse channel, wherein said processor has integrated baseband capabilities capable of processing vocodes, forward error correction codes and frames.

50. (New) The communications device according to Claim 47, said antenna comprising a monopole antenna embedded on a thin flexible sheet having a length of about 9.6 cm and width of about 6.4 cm, said sheet hinged to an edge of said smart card such that said monopole antenna may be deployed by unfolding said sheet from said platform.

51. (New) The communications device according to Claim 47, said antenna comprising a center fed dipole antenna having a first L-shaped portion and second L-shaped portion, each portion having a long and short leg, said first L-shaped portion embedded on a thin flexible sheet having a length of about 9.6 cm and width of about 6.4 cm, said sheet hinged to an edge of said smart card such that said first L-shaped portion may be deployed by unfolding said sheet from said smart card, said second L-shaped portion embedded within said smart card, said short legs of said L-shaped portions configured in a parallel manner about hinged edge of said smart card and flexible sheet.

52. (New) The communications device according to Claim 47, said antenna comprising a patch antenna affixed to at least one of a frontside and backside of said smart card.

53. (New) The communications device according to Claim 47, said smart card being structurally flexible.

54. (New) The communications device of Claim 47, said communications device being able to communicate with a base station within a range of about up to 30 kilometers.

55. (New) The communication system of Claim 47, wherein the communications device receives its location from a Global Positioning System and uploads the location to a base station.

56. (New) At least one credit card sized wireless communications device in combination with a single high powered forward channel transmitter base station having a high temperature superconductivity receiver, said at least one credit card sized wireless communications device comprising:

a smart card produced from a flexible die having a thickness of about .79 mm, a length of about 9.6 cm, and width of about 6.4 cm;

a processor integrated within said smart card which utilizes a forward and reverse channel, wherein said processor processes forward channel information for display and generation of reverse channel information, wherein the forward channel utilizes simple repetition to minimize power consumption and high forward channel carrier interference, and wherein the reverse channel utilizes forward error correcting code;

a transceiver mounted within said smart card comprising,

a receiver embedded in an application specific integrated circuit (ASIC) device which utilizes single conversion frequency shift keying (FSK) for receiving transmitted information, and

a transmitter which utilizes direct sequence spread spectrum (DSSS) differential phase shift keying (DPSK) modulation for rejecting interference and enhancing reverse channel link range;

a man machine interface integrated into a front side of said smart card including,

a one-quarter VGA size dot matrix thin polymer emissive display capable of displaying a combination of text and graphics, and

at least one push button to perform functions;



540  
C1

a contact pad integrated on an exterior side of said smart card for communicating to an integrated processor of a separate base station via a bi-directional serial bit communications link, and for providing power and an electrical ground from an outside source;

a power supply attached within said smart card composed of a high energy density battery having a planar shape, a constant current source charger, and a low drop out analog regulator; and

an antenna embedded into said smart card;

B2

wherein said at least one communication device communicates, via a reservation "Slotted Aloha" interrogation protocol, with a high-powered forward channel transmitter base station having a high temperature superconductivity receiver.

57. (New) The communications device according to Claim 56, said battery comprising at least one of a single lithium polymer secondary chemistry rechargeable battery, a primary non-rechargeable thin Li battery, and a secondary rechargeable thin Li polymer battery.

58. (New) The communications device according to Claim 56, further comprising a voice response feature comprising a MEMS microphone for transmitting voice information, wherein voice traffic is permitted on the reverse channel, wherein said processor has integrated baseband capabilities capable of processing vocodes, forward error correction codes and frames.

59. (New) The communications device according to Claim 56, said antenna comprising a monopole antenna embedded on a flexible sheet having a length of about 9.6 cm and width of about 6.4 cm, said sheet hinged to an edge of said smart card such that said monopole antenna may be deployed by unfolding said sheet from said platform.

60. (New) The communications device according to Claim 56 said antenna comprising a center fed dipole antenna having a first L-shaped portion and second L-shaped portion, each portion having a long and short leg, said first L-shaped portion embedded on a flexible sheet having a length of about 9.6 cm and width of about 6.4 cm, said sheet hinged to an edge of said smart card such that said first L-shaped portion may be deployed by unfolding said sheet from said smart card, said second L-shaped portion embedded within said smart card, said

short legs of said L-shaped portions configured in a parallel manner about hinged edge of said smart card and flexible sheet.

SGP  
CL  
61. (New) The communications device according to Claim 56, said antenna comprising a patch antenna affixed to at least one of a frontside and backside of said smart card.

62. (New) The communications device according to Claim 56, said smart card being structurally flexible.

B2  
63. (New) The communications device of Claim 56, said communications device being able to communicate with said base station within in a range of about up to 30 kilometers.

64. (New) The communication system of Claim 56, wherein the communications device receives its location from a Global Positioning System and uploads the location to a base station.

65. (New) The communication system of Claim 56 wherein said single high powered forward channel transmitter base station is located in an aircraft.

66. (New) The communications system of Claim 65, wherein the aircraft is a remote controlled drone flying within 30 miles of said at least one credit card sized wireless communications device.